**INDUSTRY SIZE IN BRAZIL**

- **MORE THAN:**
  - **15 GW** of installed capacity
  - **600 WIND FARMS**
  - **7,500 TURBINES IN OPERATION**

**OPERATING IN 12 STATES**

**AND HOW MANY ENERGY DO THEY GENERATE?**

- In 2018 wind generated a total of 48.4 TWh of wind energy
- This generation represents 8.6% of the entire generation injected into the National Interconnected System in the period
- It was perceived a grown of 14.6% in relation to the generation of the previous year (2017) compared to the 1.5% growth of the generation of the entire SIN generation (National Interconnected System).

Considering the auctions and contracts performed within the free market, Brazil will have approximately 19.4 GW of wind energy capacity installed until 2023.

**RECORDS**

- **NORTHEAST**
  - On September 13, 2018, 74.12% of all energy used in the northeast came from wind farms operating at a 76.58% capacity factor and a generation of 7,839 MWmed.

- **SOUTH**
  - On September 1st, 2018, 13.72% of the energy used in the south came from wind farms operating at 77.22% capacity factor and generation of 1,541 MWmed.

- **NORTH**
  - On September 13, 2018, 3.95% of energy used in the north came from wind farm at a 97.65% capacity factor and generation of 215 MWmed.

- **SIN (National Integrated System)**
  - On September 12, 2018, 13.98% of all energy used in the National Integrated System came from wind farms operating at a 72.30% capacity factor and generation of 8,983 MWmed.

**FAVORABLE WINDS IN BRAZIL**

- **42%** was the Average Capacity Factor in Brazil in 2018.
- The average capacity factor for wind farms worldwide is around **25%**.

From July to November, the windy season, the capacity factor for Brazil can be higher than 60%.

**Why are winds in Brazil so good?**

- **Same direction**
- **Constant**
- **Stable (Speed)**

Such winds are abundant in Brazil, especially in the northeast and south.
CONTRIBUTIONS TO WIND ENERGY IN BRAZIL

Future data in the chart above comes from contracts already confirmed in auctions and transactions completed in the free market. New auctions will add further capacity in coming years.

INTERNATIONAL COMPARISONS

Brazil is ranked 8th in the World Ranking of wind energy installed capacity. In 2012, Brazil was ranked 15th.

BENEFITS OF WIND ENERGY

Wind energy avoided the emission of about 23 million tons of CO₂ in 2017. This is equivalent to the annual emissions of some 18 million automobiles.

Every MW installed creates = 15 jobs

Meaning wind energy has already created 190 thousand jobs.

Wind power is renewable, non-polluting, has low environmental impact and helps Brazil fulfill its Climate Agreement Goals.

Wind parks do not emit CO₂.

The best prices for energy offered at the December 2017 auctions came from wind farms.

Generates income and improve the quality of life of land-owners who lease their land for wind tower placement.

There are now some 6,500 such towers in operation in Brazil. We believe some 4,000 families are receiving over R$ 10 million a month in total from leasing land for towers.

Enables land-owners to continue planting their crops or growing their animals.

Provides training and qualifications for local labor.

SOURCES OF ENERGY IN BRAZIL (GW)

INTERNATIONAL COMPARISONS

The investment in the sector was US$ 32 billion from 2010 to 2017.

2017 = US$ 3.57 billion

Wind energy is renewable, non-polluting, has low environmental impact and helps Brazil fulfill its Climate Agreement Goals.